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EXAMINER

PUTTLITZ, KARL J

ART UNIT PAPER NUMBER

1621

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/708,421

Applicant(s)

PICARD ET AL.

Examiner

Karl J. Puttlitz

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☒ Claim(s) 1-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/15/2004</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

Claims 1-14 are objected to because of the following informalities: The annotations in brackets ("[]") before the claims should be removed. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The last step of the process in claim requires recycling the first portion of the extracted second overhead to said distillation apparatus. The term "said distillation apparatus" is unclear since more than one distillation step is present in the process.

The term "improvement further comprises " is unclear in claim 2, since the improvement in claim 1 is also unclear.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit: 1621

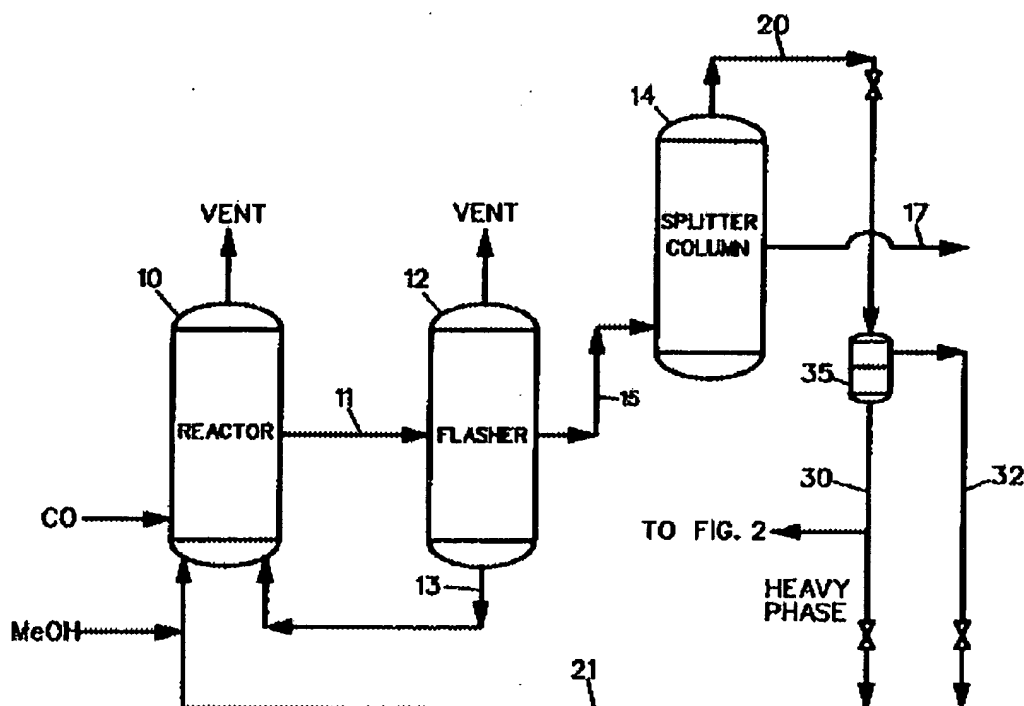
the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,371,286 to Blay et al. (Blay) in view of U.S. Patent No. 6,143,930 to Singh et al. (Singh).

The claims cover, inter alia, a process for reduction and/or removal of permanganate-reducing compounds (PRC's) and C.sub.2-12 alkyl iodide compounds formed in the carbonylation of a carbonylatable reactant selected from the group consisting of methanol, methyl acetate, methyl formate and dimethyl ether and mixtures thereof to produce a product comprising acetic acid, comprising the steps of: separating said carbonylation product to provide a volatile phase comprising acetic acid, and a less volatile phase; distilling said volatile phase to yield a purified acetic acid product and a first overhead comprising organic iodide, water, acetic acid, and at least one PRC; distilling at least a portion of the first overhead in a distillation apparatus to form a PRC enriched second overhead; extracting the second overhead with water and separating therefrom an aqueous stream comprising said at least one PRC; and recycling at least a first portion of the extracted second overhead to said distillation apparatus.

The claims also cover, inter alia, a process for making acetic acid.

With regard to the claimed embodiments, Blay teaches a process with regard to the following figure:



Wherein liquid product is drawn off from carbonylation reactor 10 at a rate sufficient to maintain a constant level therein and is introduced to flasher 12 via line 11. In flasher 12 the catalyst solution is withdrawn as a base stream 13 (predominantly acetic acid containing the rhodium and the iodide salt along with lesser quantities of methyl acetate, methyl iodide, and water), while the overhead 15 of the flasher comprises largely the product acetic acid along with methyl iodide, methyl acetate, and water. Dissolved gases in stream 11 consisting of a portion of the carbon monoxide along with gaseous by-products such as methane, hydrogen, and carbon dioxide exits the top of the splitter column overhead receiver.

The product acetic acid drawn from the side of methyl iodide-acetic acid splitter column 14 near the base (it can also be withdrawn as a base stream) is directed via line

Art Unit: 1621

17 for final purification such as to remove water as desired by methods which are obvious to those skilled in the art including, most preferably, distillation. The overhead 20 from methyl iodide-acetic acid splitter, comprising mainly methyl iodide and methyl acetate plus some water and acetic acid, is recycled via line 21 to the carbonylation reactor 10. When overhead 20 is condensed it typically splits into two liquid phases in decanter 35 if sufficient water is present. The heavy phase 30 is comprised mainly of methyl iodide plus some methyl acetate and acetic acid as well as the alkane and carbonyl impurities. The light phase 32 is comprised mainly of water and acetic acid plus some methyl acetate. The overhead heavy phase 30 from methyl iodide-acetic acid splitter is subject to treatment according to this invention or these streams can be combined with recycle products from further purification processes containing methyl iodide, methyl acetate, water, and other impurities to become recycle 21 which may also be subject to treatment according to this invention. See description bridging columns 5 and 6.

The difference between the process set forth in the rejected claims and the process disclosed by Blay is that Blay fails to explicitly disclose the required steps of extracting the second overhead with water and separating therefrom an aqueous stream comprising said at least one PRC; and recycling at least a first portion of the extracted second overhead to said distillation apparatus. With regard to the process for making acetic acid, these steps include extracting the second overhead with water and separating therefrom an aqueous extract containing concentrated PRC's for disposal,

wherein at least a first portion of the extracted second overhead is recycled and distilled with the first overhead. It is for this proposition that the examiner joins Singh.

Specifically Singh teaches a purification process in which the light ends overhead is distilled twice, in each case taking the acetaldehyde overhead and returning a methyl iodide rich residuum to the reactor. The acetaldehyde-rich distillate is extracted with water to remove the majority of the acetaldehyde for disposal, leaving a significantly lower acetaldehyde concentration in the raffinate that is recycled to the reactor. See description bridging columns 4 and 5. In this regard, those of ordinary skill would have been motivated to modify Blay to include the recited extraction and recycling steps since Singn teaches that these steps of useful in the production of acetic acid, and specifically, reducing permanganate reducing compounds in such a process. Therefore, the rejected claims are prima facie obvious in view of the combination of Blay and Singh since these patents teach or suggest the elements of the rejected claims with a reasonable expectation of success.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

Art Unit: 1621

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-36 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-41 of copending Application No. 10/708420. Although the conflicting claims are not identical, they are not patentably distinct from each other since the claims of the copending application require removal of permanganate reducing compounds in such a manner that teach the rejected claims with such particularity and guidance that the rejected claims would have been *prima facie* obvious within the meaning of section 103.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-36 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 10/708423. Although the conflicting claims are not identical, they are not patentably distinct from each other since the claims of the copending application require removal of permanganate reducing compounds in such a manner that teach the rejected claims with such particularity and guidance that the rejected claims would have been *prima facie* obvious within the meaning of section 103.



This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1-36 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 11/116771. Although the conflicting claims are not identical, they are not patentably distinct from each other since the claims of the copending application require removal of permanganate reducing compounds in such a manner that teach the rejected claims with such particularity and guidance that the rejected claims would have been *prima facie* obvious within the meaning of section 103.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl J. Puttlitz whose telephone number is (571) 272-0645. The examiner can normally be reached on Monday to Friday from 9 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thurman K. Page, can be reached at telephone number (571) 272-0602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1621

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'K. Puttlitz', is positioned above the printed name.

Karl J. Puttlitz  
*Assistant Examiner*